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(Building Geo-Tech & Highway Materials Testing Laboratory)

An ISO 9001-2015 Certified Company

NABL Accredited As Per ISO/IEC 17025:2017 Laboratory

Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date: 01.10.2021

TEST REPORT

CLIENT	:	**Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
AGENCY	:	**Sri. R Ranganath,** Contractor, Bangalore.
NAME OF THE WORK	:	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
SAMPLE ID	:	Cement (Zuari OPC 53 Grade)
DATE OF MANUFACTURE		August- 2021
DATE OF TESTING		29.09.2021 to 01.10.2021
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 269-2015
1	a) Initial Setting Time	IS-4031 (Part -5)	130 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	340 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	30.00 %	-

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Asst. Executive Engineer
Yelahanka Sub. Division
(BBMP Ynk. Zn)
Yelahanka, Bangalore

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Authorised Signatory

No.01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date : 01.10.2021

TEST REPORT ON FINE AGGREGATES (SAND)

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. R Ranganath,** Contractor, Bangalore.

Name of Work : Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.

Date of Testing : 01.10.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : Sand Total Wt. of Aggregates in gms 1000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	81	8.10	8.10	91.9	90-100
2.36	132	13.20	21.30	78.7	75-100
1.18	189	18.90	40.20	59.8	55-90
600 Micron	152	15.20	55.40	44.6	35-59
300 Micron	242	24.20	79.60	20.4	8-30
150 Micron	135	13.50	93.10	6.9	0-10

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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date : 01.10.2021

TEST REPORT ON FINE AGGREGATES (SAND)
IS 2116-1980

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. R Ranganath,** Contractor, Bangalore.

Name of Work : Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.

Date of Testing : 01.10.2021

Material : Sand - Masonry Total wt. of aggregates in gms = 1000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 2116-1980
4.75	0	0.00	0.00	100.0	100
2.36	12	1.20	1.20	98.8	90-100
1.18	37	3.70	4.90	95.1	70-100
600 Micron	84	8.40	13.30	86.7	40-100
300 Micron	265	26.50	39.80	60.2	5-70
150 Micron	489	48.90	88.70	11.3	0-15

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Job No: CACE/BBMP/RR/W.No.01/2021-22 Date : 14.10.2021

GRADATION FOR GSB (Grading V)

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. R Ranganath,** Contractor, Bangalore.

Name of work : Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.

BIS Code : IS 2386 Part (1):1963
: IS 2720 part (5):1985

Date of Testing : 12.10.2021 to 14.10.2021

Oven Dry Wt (gm) : 13000

TABLE – 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
75	0	0	0.00	100	100
53	771	771	5.93	94.07	80-100
26.5	2165	2936	22.58	77.42	55-90
9.5	2052	4988	38.37	61.63	35-65
4.75	1958	6946	53.43	46.57	25-50
2.36	3825	10771	82.85	17.15	10-20
0.85	1726	12497	96.13	3.87	2-10
0.425	115	12612	97.02	2.98	0-5

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Table 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	22.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date : 18.10.2021

GRADATION FOR WMM

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. R Ranganath,** Contractor, Bangalore.

Name of Work : Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.

IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing : 18.10.2021

Material Type : Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	189	189	1.9	98.1	95-100
22.4	2536	2725	27.3	72.8	60-80
11.2	2156	4881	48.8	51.2	40-60
4.75	1865	6746	67.5	32.5	25-40
2.36	1120	7866	78.7	21.3	15-30
0.600	589	8455	84.6	15.5	8-22
0.075	1215	9670	96.7	3.3	0-5

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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date: 18.10.2021

Aggregate Impact Value

Client	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Agency	Sri. R Ranganath, Contractor, Bangalore.
Name of the Work	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	18.10.2021

Sl No.	Details	Test No. 1	Test No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	384	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297	297	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.25	22.66	22.45

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Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date : 18.10.2021

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Agency	Sri. R Ranganath, Contractor, Bangalore.
Name of Work	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	18.10.2021

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	11.80	12.20	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	13.60	13.90	
	Combined Flakiness & Elongation index	25.40	26.10	

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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date : 20.10.2021

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. R Ranganath,** Contractor, Bangalore.

Name of Work : Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 18.10.2021 to 20.10.2021

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	22.50	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Date: 20.10.2021

Aggregate Gradation Test

Client	**Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	**Sri. R Ranganath,** Contractor, Bangalore.
Name of the Work	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
BIS Code	IS 2386(Part 1):1963(RA 2011)
Sample I / D	Hot mix Plant, Bangalore.
Type of Mix	Dense Graded Bituminous Macadam
Date of Testing	20.10.2021

Total Weight of Sample: 10000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.10	Remarks
37.50	0	0.0	0	100	100	Gradation satisfies Grade II MORTH specification
26.50	710	7.1	7.10	92.90	90 - 100	
19.00	1236	12.4	19.46	80.54	71 - 95	
13.20	1389	13.9	33.35	66.65	56 - 80	
4.75	2510	25.1	58.45	41.55	38 - 54	
2.36	1068	10.7	69.13	30.87	28 - 42	
0.300	1365	13.7	82.78	17.22	7 - 21	
0.075	1150	11.5	94.28	5.72	2 - 8	

Total Weight of Sample: 10000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.10	Remarks
37.5	0	0.0	0	100	100	Gradation satisfies Grade II MORTH specification
26.5	685	6.9	6.85	93.15	90 - 100	
19	1425	14.3	21.10	78.90	71 - 95	
13.2	1168	11.7	32.78	67.22	56 - 80	
4.75	2410	24.1	56.88	43.12	38 - 54	
2.360	1165	11.7	68.53	31.47	28 - 42	
0.300	1326	13.3	81.79	18.21	7 - 21	
0.075	1184	11.8	93.63	6.37	2 - 8	

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JobNo: CACE/BBMP/RR/W.No.01/2021-22 Date : 20.10.2021

TEST RESULTS OF AGGREGATE IMPACT VALUE

Client : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

Agency : Sri. R Ranganath, Contractor, Bangalore.

Name of work : Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.

Source / Location : Hot Mix Plant, Bangalore

BIS Code : IS 2386 Part (4):1963

Type of Mix : Dense Graded Bituminous Macadam

Date of test : 20.10.2021

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W1 g	382	384	
2	Weight of agregate passing 2.36 mm sieve after the test = W2 g	85	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W3 g	297	297	
5	Aggregate Impact value = percent fines 100* (W2/W1) percent	22.25	22.66	22.45

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Comments:

→ Maximum allowable Aggregate Impact value for Dense Graded Bituminous Macadam is 27% (Table 500-8 of MORTH specification)

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Job No: CACE/BBMP/RR/W.No.01/2021-22

Date: 20.10.2021

TEST REPORT ON PAVING BITUMEN

Client	**Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	**Sri. R Ranganath,** Contractor, Bangalore.
Name of work	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
BIS Code	IS 73:2013,IS 1203:1978, IS 1208:1978, IS 1205:1978, IS1448(P-69):1969
Date of Testing	20.10.2021
Type of Mix	Dense Graded Bituminous Macadam , VG 30
Source of Location	Hot Mix Plant

The results of the tests conducted on the bitumen sample using for Dense Graded Bituminous Macadam

Sl.No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 0C, 100gms, 5sec, 1/10 mm	62	Min 45
2	Softening point, 0C	49	Min 47
3	Ductility at 250C, cm	>100	Min40
4	Flash Point, 0C	284	Min 220

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Job No.: CACE/BBMP/RR/W.No.01/2021-22

Date: 22.10.2021

Specific Gravity And Water Absorption Test

Client	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Agency	Sri. R Ranganath, Contractor, Bangalore.
Name of the Work	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
BIS Code	IS 2386(Part 3):1963
Type of Mix	Dense Graded Bituminous Macadam
Date of Testing	20.10.2021 to 22.10.2021

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2020	2022	2024	
2	Weight of basket suspended in water	W_2 g	754	754	754	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1266	1268	1270	
4	Weight of saturated surface dry aggregate in air	W_3 g	2015	2017	2019	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	749	749	749	
6	Weight of oven dried aggregate	W_4 g	2009	2010	2011	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.682	2.684	2.685	2.684
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.704	2.709	2.714	2.709
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.30%	0.35%	0.40%	0.35%

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Comments:

→ Maximum allowable Aggregate Water absorption value for Dense Graded Bituminous Macadam is 2.0%(As per MORTH table 500.8)

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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date: 27.10.2021

BITUMEN CONTENT AND GRADATION DETERMINATION OF DENSE GRADED BITUMINOUS MACADAM MIX AASHTO T 164 & AASHTO T 30

Client	Assistant Executive Engineer, Yelahanka Sub Division, BBMP,
Agency	Sri. R Ranganath, Contractor, Bangalore.
Name of the Work	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
Date of Testing	27.10.2021

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	477.5	477
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	22.50	23.00
7. Bitumen content in %	4.50	4.60
8. Average	4.55	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.10
37.5	0	0	0	100	100
26.5	32.9	32.9	6.9	93.1	90 - 100
19	70.8	103.7	21.7	78.3	71 - 95
13.2	66.3	170	35.6	64.4	56 - 80
4.75	82.8	252.8	52.9	47.1	38 - 54
2.360	82.6	335.4	70.2	29.8	28 - 42
0.300	91.8	427.2	89.5	10.5	7 - 21
0.075	25.3	452.5	94.8	5.2	2 - 8

SIEVE SIZE	Test 2				
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.10
37.5	0	0	0	100	100
26.5	34.5	34.5	7.2	92.8	90 - 100
19	73.6	108.1	22.7	77.3	71 - 95
13.2	65.8	173.9	36.5	63.5	56 - 80
4.75	82.90	256.8	53.8	46.2	38 - 54
2.360	76.4	333.2	69.9	30.1	28 - 42
0.300	92.8	426	89.3	10.7	7 - 21
0.075	22.8	448.8	94.1	5.9	2 - 8

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For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

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CIVIL AIM CONSULTANTS & ENGINEERS

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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date: 25.10.2021

Aggregate Impact Value

Client	**Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	**Sri. R Ranganath,** Contractor, Bangalore.
Name of the Work	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
BIS Code	IS 2386(Part 4):1963
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Bituminous Concrete
Date of Testing	25.10.2021

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	381	383	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	85.5	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297	297.5	
4	Aggregate Impact value = percent fines 100* (W_2/W_1) percent	22.05	22.32	22.19

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Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%(MORTH table no.500.16)

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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date : 25.10.2021

Aggregate Gradation Test

IS : 2386 Part I

Client	**Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	**Sri. R Ranganath,** Contractor, Bangalore.
Name of the Work	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
BIS Code	IS 2386(Part 1):1963
Sample I / D	Hot Mix Plant, Bangalore
Type of Mix	Bituminous Concrete
Date of Testing	25.10.2021

Total Weight of Sample: 5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	415	8.30	8.30	91.70	90 - 100	
9.5	482	9.64	17.94	82.06	70 - 88	
4.75	635	12.70	30.64	69.36	53 - 71	
2.36	682	13.64	44.28	55.72	42 - 58	
1.18	520	10.40	54.68	45.32	34 - 48	
0.600	546	10.92	65.60	34.40	26 - 38	
0.300	489	9.78	75.38	24.62	18 - 28	
0.150	366	7.32	82.70	17.30	12 - 20	
0.075	482	9.64	92.34	7.66	4 - 10	

Total Weight of Sample: 5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	420	8.40	8.40	91.60	90 - 100	
9.5	549	10.98	19.38	80.62	70 - 88	
4.75	682	13.64	33.02	66.98	53 - 71	
2.36	533	10.66	43.68	56.32	42 - 58	
1.18	559	11.18	54.86	45.14	34 - 48	
0.600	546	10.92	65.78	34.22	26 - 38	
0.300	682	13.64	79.42	20.58	18 - 28	
0.150	198	3.96	83.38	16.62	12 - 20	
0.075	482	9.64	93.02	6.98	4 - 10	

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Job No.: CACE/BBMP/RR/W.No.01/2021-22

Date: 25.10.2021

TEST REPORT

Client	:	**Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	:	**Sri. R Ranganath,** Contractor, Bangalore.
Name of the work	:	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
IS Code	:	IS 73:2013, IS 1203:1978(RA 2008), IS 1205:1978(RA 2009), IS 1208:1978(RA 2009), IS 1209:1978(RA 2009)
Source of location	:	Hot mix Plant, Bangalore, VG 30
Date of testing	:	25.10.2021

The results of the tests conducted on the bitumen sample using for Bituminous Concrete

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	48	Min 45
2	Softening point, ^{0}C	54	Min. 47
3	Ductility at 27^{0}C, cm	> 100	Min. 40
4	Flash Point, ^{0}C	272	Min. 220

AE-1

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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date: 28.10.2021

TEST REPORT ON STABILITY OF MIX

Client	:	**Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	:	**Sri. R Ranganath,** Contractor, Bangalore.
Name of the Work	:	Asphalting of road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
Source of location	:	Hot mix Plant, Bangalore
Type of Mix	:	Bituminous Concrete
Date of Testing	:	28.10.2021

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.44	10.82	9 Kn (min)
2	Marshal flow, mm	2.69	7.51	2 – 4
3	Percent air voids in Mineral Aggregate	13.45	14.52	13 – 15
4	Voids in Compacted Mix	3.84	4.15	3 – 6
5	Percent Voids filled with Bitumen	69.29	70.12	65 - 75
6	Density, g/cc	2.25	2.26	--

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A.E.E

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Job No.: CACE/BBMP/RR/W.No.01/2021-22 Date : 28.10.2021

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
AGENCY	Sri. R Ranganath, Contractor, Bangalore.
NAME OF THE WORK	Asphalting to road from BBMP revenue office towards Down bazar road upto N H in Ward No.01 Kempegowda of Yelahanka Sub Division, BBMP, Bangalore.
SAMPLE ID	Hot Mix Plant, Bangalore
DATE OF TESTING	28.10.2021

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472	473
3. Weight of Asphalt and Mineral matter Extracted, g	28	27
4. Weight of Mineral Matter, g	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g (corrected)	28	27
7. Bitumen content in %	5.60	5.40
8. Average	5.50	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				Requirement as per MORTH table 500.17
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	12.2	12.2	2.6	97.4	90 - 100
9.5	68.9	81.1	17.2	82.8	70 - 88
4.75	92.6	173.7	36.8	63.2	53 - 71
2.36	42.5	216.2	45.8	54.2	42 - 58
1.18	36.8	253	53.6	46.4	34 - 48
0.600	50.9	303.9	64.4	35.6	26 - 38
0.300	46.3	350.2	74.2	25.8	18 - 28
0.150	35.8	386	81.8	18.2	12 - 20
0.075	46.9	432.9	91.7	8.3	4 - 10

SIEVE SIZE	Test 2				Requirement as per MORTH table 500.17
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	14.5	14.5	3.1	96.9	90 - 100
9.5	62.8	77.3	16.3	83.7	70 - 88
4.75	90.9	168.2	35.6	64.4	53 - 71
2.36	46.5	214.7	45.4	54.6	42 - 58
1.18	43.8	258.5	54.7	45.3	34 - 48
0.600	52.4	310.9	65.7	34.3	26 - 38
0.300	49.3	360.2	76.2	23.8	18 - 28
0.150	35.6	395.8	83.7	16.3	12 - 20
0.075	40.8	436.6	92.3	7.7	4 - 10

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